

Complete Summary

GUIDELINE TITLE

Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association.

BIBLIOGRAPHIC SOURCE(S)

Haskell WL, Lee IM, Pate RR, Powell KE, Blair SN, Franklin BA, Macera CA, Heath GW, Thompson PD, Bauman A, American College of Sports Medicine, American Heart Association. Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Circulation* 2007 Aug 28;116(9):1081-93. [109 references] [PubMed](#)

GUIDELINE STATUS

This is the current release of the guideline.

It updates a previously published version: pate RR, Pratt M, Blair SN, Haskell WL, Macera CA, Bouchard C, Buchner D, Ettinger W, Heath GW, King AC, et al. Physical activity and public health. A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *JAMA*. 1995 Feb 1;273(5):402-7.

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SCOPE

DISEASE/CONDITION(S)

General health

GUIDELINE CATEGORY

Counseling
Prevention

CLINICAL SPECIALTY

Cardiology
Family Practice
Internal Medicine
Preventive Medicine
Sports Medicine

INTENDED USERS

Patients
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

- To update and clarify the 1995 recommendations on Physical Activity and Public Health published by the American College of Sports Medicine and the Centers for Disease Control and Prevention as to the types and amounts of physical activity needed by healthy adults to improve and maintain health
- To provide a more comprehensive and explicit public health recommendation for adults based upon available evidence of the health benefits of physical activity

TARGET POPULATION

Healthy adults aged 18 to 65 years and persons in this age range with chronic conditions not related to physical activity (e.g., hearing impairment)

Note: During pregnancy and the post-partum period additional precautions may be needed: these issues have been considered by other expert committees. A different expert panel developed a companion recommendation for older adults and adults aged 50-64 with chronic conditions or physical functional limitations.

INTERVENTIONS AND PRACTICES CONSIDERED

1. Moderate-intensity exercise (e.g., brisk walk)
2. Vigorous-intensity exercise (e.g., jogging)
3. Light-intensity exercise (self care, cooking, casual walking, shopping)
4. Muscle strengthening exercise
5. Duration of exercise

MAJOR OUTCOMES CONSIDERED

- Metabolic equivalent energy expenditure
- Morbidity and mortality
- Changes in laboratory parameters

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

For scientific input, the guideline panel initially relied heavily on published evidence from a meeting held in 2000 jointly sponsored by Centers for Disease Control and Prevention (CDC) and Health Canada on Dose-Response Aspects of Physical Activity and Health. The conclusion and consensus statement from this meeting were based on systemic reviews of the literature. Panel members also conducted extensive searches of the literature on physical activity and health to 2006.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

- A. Data derived from multiple randomized clinical trials
- B. Data derived from a single randomized trial or from nonrandomized studies
- C. Consensus opinion of experts

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

In February 2003, an expert panel was convened and charged with reviewing and updating the original Centers for Disease Control and Prevention (CDC)/American

College of Sports Medicine (ACSM) recommendation for physical activity and public health. This panel, which consisted of physicians, epidemiologists, exercise scientists and public health experts, reviewed scientific advances since the publication of the original recommendation, newly issued recommendations provided by other organizations and communications issues such as clarity and consistency.

In addition to scientific updates, the expert panel considered issues and advances in understanding roles and strategies in communication of health messages in the update and clarification of the prior recommendations. A second Centers for Disease Control and Prevention (CDC)-Health Canada workshop on communicating physical activity messages was held in 2001 and identified several key strategies for improving the communication of physical activity recommendations. A different expert panel developed a recommendation for older adults as a companion recommendation to that presented in this article. Manuscripts describing the recommendation for adults generally and for older adults as a companion were circulated for comments, revised, and edited for consistency before review and approval by ACSM and the American Heart Association (AHA).

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is useful and effective (should; is recommended; is indicated; is useful, effective, beneficial)

Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment

IIa: Weight of evidence/opinion is in favor of usefulness/efficacy (is reasonable; can be useful, effective or beneficial; is probably recommended or indicated)

IIb: Usefulness/efficacy is less well established by evidence/opinion (may/might be considered, may/might be reasonable, usefulness/effectiveness is unknown, unclear/uncertain or not well established)

Class III: Conditions for which there is evidence and/or general agreement that the procedure/treatment is not useful/effective and in some cases may be harmful (is not recommended; is not indicated; should not; is not useful/effective, beneficial; may be harmful)

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

- A draft manuscript was prepared and circulated for review to the expert panel as well as to outside experts. Comments were integrated into the final recommendation.
- This document was approved by the American College of Sports Medicine on January 5, 2007, and the American Heart Association Science Advisory and Coordinating Committee on March 24, 2007.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Levels of evidence (A-C) and classification of recommendations (I-III) are defined at the end of the "Major Recommendations" field.

Updated Recommendation Statement

This recommendation applies to healthy adults between 18 and 65 years of age, and to persons in this age range with chronic conditions not related to physical activity (e.g., hearing impairment). During pregnancy and the postpartum period additional precautions may be needed: these issues have been considered by other expert committees. The present preventive recommendation specifies how adults, by engaging in regular physical activity, can promote and maintain health, and reduce risk of chronic disease and premature mortality. A companion recommendation builds on the information in this paper but specifically applies to adults aged 65 and over, and adults aged 50 to 64 with chronic conditions or physical functional limitations (e.g., arthritis), that affect movement ability or physical fitness. The following recommendation reflects a review of evidence published since the issuance of the CDC/ACSM recommendation in 1995 and considers key issues not fully clarified in the original recommendation.

Aerobic Activity

To promote and maintain health, all healthy adults aged 18 to 65 years need moderate-intensity aerobic physical activity for a minimum of 30 min on five days each week or vigorous-intensity aerobic activity for a minimum of 20 min on three days each week. **[I (A)]** Also, combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation. **[IIa (B)]** For example, a person can meet the recommendation by walking briskly for 30 min twice during the week and then jogging for 20 min on two other days. Moderate-intensity aerobic activity, which is generally equivalent to a brisk walk and noticeably accelerates the heart rate, can be accumulated toward the 30-min minimum from bouts lasting 10 or more minutes. **[I (B)]** Vigorous-intensity activity is exemplified by jogging, and causes rapid breathing and a substantial increase in heart rate. This recommended amount of aerobic activity is in addition to routine activities of daily living of light intensity (e.g., self care, cooking, casual walking or shopping) or lasting less than 10 min in duration (e.g., walking around home or office, walking from the parking lot).

Muscle-Strengthening Activity

To promote and maintain good health and physical independence, adults will benefit from performing activities that maintain or increase muscular strength and endurance for a minimum of two days each week. **[IIa (A)]** It is recommended that 8 to 10 exercises be performed on two or more nonconsecutive days each week using the major muscle groups. To maximize strength development, a resistance (weight) should be used that allows 8 to 12 repetitions of each exercise resulting in volitional fatigue. Muscle-strengthening activities include a progressive weight-training program, weight bearing calisthenics, stair climbing, and similar resistance exercises that use the major muscle groups.

Benefits of Greater Amounts of Activity

Participation in aerobic and muscle-strengthening physical activities above minimum recommended amounts provides additional health benefits and results in higher levels of physical fitness. **[I (A)]** Many adults, including those who wish to improve their personal fitness or further reduce their risk for premature chronic health conditions and mortality related to physical inactivity, should exceed the minimum recommended amounts of physical activity. In addition, to further promote and maintain skeletal health, adults will benefit by engaging in extra weight-bearing activity and higher-impact activity such as stair-climbing or jogging, as tolerated. **[IIa (B)]** To help prevent unhealthy weight gain, some adults will need to exceed minimum recommended amounts of physical activity to a point that is individually effective in achieving energy balance, while considering their food intake and other factors that affect body weight. **[IIa (B)]**

Clarifications to the 1995 Recommendation

Although fundamentally unchanged from the 1995 recommendation, the updated recommendation is improved in several ways. First, the recommended frequency for moderate-intensity physical activity has been clarified. The 1995 document simply specified "most, preferably all days per week" as the recommended frequency while the new recommendation identifies five days per week as the recommended minimum.

Second, vigorous-intensity physical activity has been explicitly incorporated into the recommendation. To acknowledge both the preferences of some adults for vigorous-intensity physical activity and the substantial science base related to participation in such activity, the recommendation has been clarified to encourage participation in either moderate- and/or vigorous-intensity physical activity. Vigorous-intensity physical activity was implicit in the 1995 recommendation. It is now explicitly an integral part of the physical activity recommendation.

Third, the updated recommendation now specifies that moderate- and vigorous-intensity activities are complementary in the production of health benefits and that a variety of activities can be combined to meet the recommendation. This combining of activities is based on the amount (intensity x duration) of activity performed during the week and uses the concept of METs (metabolic equivalents) to assign an intensity value to a specific activity (See Table 1 and section regarding Activity Dose in the original guideline document).

Fourth, the updated recommendation now clearly states that the recommended amount of aerobic activity (whether of moderate- or vigorous-intensity) is in

addition to routine activities of daily living which are of light intensity, such as self care, casual walking or grocery shopping, or less than 10 min of duration such as walking to the parking lot or taking out the trash. Few activities in contemporary life are conducted routinely at a moderate intensity for at least 10 min in duration. However, moderate- or vigorous-intensity activities performed as a part of daily life (e.g., brisk walking to work, gardening with shovel, carpentry) performed in bouts of 10 min or more can be counted towards the recommendation. Although implied, this concept was not effectively communicated in the original recommendation.

Fifth, the new recommendation emphasizes the important fact that physical activity above the recommended minimum amount provides even greater health benefits. The point of maximum benefit for most health benefits has not been established but likely varies with genetic endowment, age, sex, health status, body composition and other factors. Exceeding the minimum recommendation further reduces the risk of inactivity-related chronic disease. Although the dose-response relation was acknowledged in the 1995 recommendation, this fact is now explicit.

Sixth, although the original recommendation introduced the concept of accumulating short bouts of physical activity toward the 30-min goal, there was confusion regarding how short these episodes could be. For consistency and clarity, the minimum length of these short bouts is clarified as being 10 min.

Seventh, muscle-strengthening activities have now been incorporated into the physical activity recommendation. Although the 1995 recommendation mentioned the importance of muscular strength and endurance, it stopped short of making specific declarations in this area. Available evidence now allows the integration of muscle strengthening activities into the core recommendation.

Finally, minor wording changes in the recommendation have been made to enhance clarity in communications. For example, the term "aerobic" or endurance has been added to clarify the type of physical activity being recommended and to differentiate it from muscle-strengthening exercises, which are now part of the core recommendation.

Definitions:

Levels of Evidence

- A. Data derived from multiple randomized clinical trials
- B. Data derived from a single randomized trial or from nonrandomized studies
- C. Consensus opinion of experts

Classification of Recommendations

Class I: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is useful and effective (should; is recommended; is indicated; is useful, effective, beneficial)

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CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is explicitly stated for each primary recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate public health message that encourages increased participation in physical activity

POTENTIAL HARMS

Risk of Physical Activity

- Physically active adults tend to experience a higher incidence of leisure-time and sport related injuries than their less active counterparts.
- Risk of musculoskeletal injuries increases as the intensity and amount of the activity increases and can be as high as 55% among men and women involved in jogging programs and U.S. Army basic training.
- The risk of sudden cardiac arrest or myocardial infarction is very low in generally healthy adults during moderate-intensity activities. However, risk of cardiovascular complications increases transiently during vigorous physical exertion, especially for persons who have latent or documented coronary artery disease and are habitually sedentary.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Haskell WL, Lee IM, Pate RR, Powell KE, Blair SN, Franklin BA, Macera CA, Heath GW, Thompson PD, Bauman A, American College of Sports Medicine, American Heart Association. Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Circulation* 2007 Aug 28;116(9):1081-93. [109 references] [PubMed](#)

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1995 (revised 2007 Aug)

GUIDELINE DEVELOPER(S)

American College of Sports Medicine - Medical Specialty Society
American Heart Association - Professional Association

SOURCE(S) OF FUNDING

American Heart Association

GUIDELINE COMMITTEE

American College of Sports Medicine

American Heart Association

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

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This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all

members of the writing group members are required to complete and submit. A relationship is considered to be "significant" if (a) the person receives \$10 000 or more during any 12-month period, or 5% or more of the person's gross income; or (b) the person owns 5% or more of the voting stock or share of the entity, or owns \$10 000 or more of the fair market value of the entity. A relationship is considered to be "modest" if it is less than "significant" under the preceding definition.

*Modest

**Significant

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Heart Association Web site](#).

Print copies: Available from the American Heart Association, Public Information, 7272 Greenville Ave, Dallas, TX 75231-4596; Phone: 800-242-8721

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI Institute on January 8, 2008. The information was verified by the guideline developer on February 12, 2008.

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Date Modified: 9/15/2008

